BIBLIOGRAPHICAL RECORD.

(*Continued from page* 120.)

The date of publication, here given in brackets [ ], marks the time at which the work was received by the Editor, unless an earlier date of publication is known to him. An asterisk * before a title is the Recorder's certificate of accuracy of quotation. Corrections of errors and notices of omissions are solicited. — B. Pickman Mann.

Nos. 883 and 884 are from **Annals and Mag. Nat. Hist.**, ser. 4, v. 20.

* 883. Jos: Leidy. Remarks on the yellow ant. p. 539–540. [Dec., 1877.]

["From Proc. Acad. Nat. Sci. Philad., 1877, p. 145."]

* 884. J. Chatin. On the coloration of the optical elements in Locusta viridissima. p. 542. [Dec., 1877.]

"The bacilli of Locusta present, in their intimate constitution, great similarity to the same parts studied in the Crustacea; their proper coloration is the same in these different types." Description of the structure of the bacilli, which are of a rose-color.

* 885. **The Canadian Naturalist and Quarterly Journal of Science,** v. 7, contains the following, and no. 886.

a. Color of cocoons of *Bombyx mori* affected by the nature of the food-plants of the larvæ, p. 182–183.

* 886. S: H. Scudder. Two new fossil cockroaches from the Carboniferous of Cape Breton. p. 271–272, fig. 1–2. [July, 1874.]

Describes *Blattina bretonensis* and *B. heeri* = 2 n. spp.; enumerates the (3) previously described carboniferous American fossil cockroaches.

* 887. The **Can. Nat.**, v. 8, as far as p. 378, contains the following, and nos. 888 to 894.

a. Entomological doings of the Natural History Society of Montreal, during 1874–1877 (by J. F. Whiteaves) [increase and arrangement of the collections] p. 19–20, p. 180–181, p. 305, p. 307, [donations received] p. 24.

b. List of insects taken or observed June 10, 1876, at Belœil mountain (by F. B. Caulfield) [21 Col., 20 Lep., 2 Orth., 1 Neur.], p. 288–289.

* 888. F. B. Caulfield. List of diurnal Lepidoptera of the island of Montreal. p. 25–27. [Nov., 1875.]

[From Can. Entom.; see Rec., no. 476.] Enumerates 47 species, with notes on abundance and seasons.

* 889. G. E. Bulger. A summer stroll in England. p. 28–30. [Nov., 1875.]

Useless mention of a few plants, birds and insects seen at Upnor, in Kent, in May and June, 1874.

Can. Nat., v. 8.

* 890. S: H. Scudder. New and interesting insects from the Carboniferous of Cape Breton. p. 88–90, fig. 1–2. [Apr., 1876.] Also separate. 2 p. t 17 × 9, fig. 1–2.

[Same as the article cited in Rec., no. 582.]

* 891. G: M. Dawson. Notes on the locust invasion of 1874 in Manitoba and the north-west territories. p. 119–134. [Nov., 1876.]

Habits, history and ravages of *Caloptenus spretus*. Summary of information collected from the region lying north of Lat. 49° N., towards the history of the invasion of the summer of 1874. A belt of coniferous forest seems to arrest the invasions.

* 892. G: M. Dawson. Notes on the appearance and migrations of the locust in Manitoba and the north-west territories—Summer of 1875. p. 207–226. [Apr., 1877.]

Information similar to that about the invasion of 1874. Two classes of locusts occurred: the natives and the invaders mostly from the south; hatching began as early as May 7, and was noticed in September, where the ground was overflowed all summer; migrations of natives were mostly towards the southeast and south.

* 893. J. F. Whiteaves. Obituary notice of Elkanah Billings, F. G. S. p. 251–261. [July, 1877.]

Mr. Billings was born May 5, 1820, and died June 14, 1876.

* 894. C: V. Riley. The Rocky Mountain locust. p. 363–374. [Dec., 1877.]

[From Amer. Nat., v. 11, p. 663–673.] Distinctive characters and evolutionary history of *Caloptenus spretus*; its habits and means against it.

* 895. **Field and Forest**, v. 1 (1875–1876), contains the following, and nos. 896 to 909.

a. Unusually great killing of horses and mules in the southcentral U. S., by the "buffalo gnat," in the spring of 1875, p. 2. *b*. *Pieris rapae* found 27 April, *Doryphora 10-lineata* 12 May, *Anthrenus varius* on flowers of Spiraea early in May (by C: R. Dodge), p. 8. *c*. A late cold winter not destructive of eggs of *Caloptenus spretus*, p. 8. *d*. *Doryphora 10-lineata* eaten by chickens, p. 16. *e*. Figure of larva of Ephemera, pl. 1, fig. 15, opposite p. 24. *f*. Occurrence of *Doryphora 10-lineata* in Vermont, Canada and Rhode Island, p. 28. *g*. A pump useful in warfare against insects, p. 31. *h*. Florida litany [verses upon insect pests], p. 32. *i*. Locusts gnawing the edge from a scythe in eating the juices of grass hardened into a gum upon it, p. 32. *j*. How a scorpion kills flies (by C: R. Dodge), p. 42. *k*. Description of the cases used by the Department of Agriculture for the preservation of its collection of insects (by C: R. Dodge), p. 43.

l. Phylloxera vastatrix on vines destroyed entirely in thirteen days by the application of potassium sulpho-carbonate, p. 56. *m.* Calendar of meetings of the Cambridge Entomological Club, for 1876, p. 64.

* 896. Cyrus Thomas. Description of a new grasshopper from Arizona. p. 4–5. [June, 1875.]

Describes *Eremobia magna*, n. sp.

* 897. C: R. Dodge. A new enemy to the cucumber. p. 9–10, fig. [July, 1875.]

Pupa and imago of *Phakellura hyalinitalis*, whose larva is destructive to Cucumeris in Florida, figured and described.

* 898. C: R. Dodge. Strength and perseverance of ants. p. 25–26. [Aug., 1875.]

Observations upon ants dragging heavy articles of food homewards.

* 899. E. F. Jackson. Grasshoppers again troublesome in Minnesota. p. 31. [Aug., 1875.]

Ten km. south of Graham Lakes the southern limit of ravages in Minnesota; eggs destroyed by "a white worm", imagos by "a white maggot;" more damage done in four hours, on the last day, than in eight days previous together.

* 900. E. C. Huntington. Grasshoppers again troublesome in Minnesota. p. 31. [Aug., 1875.]

Locusts appeared 10 July; ground full of eggs 26 July.

* 901. *Science Gossip.* The house-fly. p. 47–48. [Jan., 1876.]

Musca domestica said to cleanse the air by devouring the animalcules in it. [See Rec., no. 861 *k*, no. 862 *z*.]

* 902. J. J. Chickering. Notice of White Mountain birds and insects. p. 48. [Jan., 1876.]

List of five "&c." species of "butterflies" (one of which is a moth) captured and one seen.

* 903. Fs: Gregory Sanborn. Sentiment among insects. p. 55–56. [Feb., 1876.]

Canthon laevis is usually found in pairs, the female rolling the ball in which eggs are to be laid, the male trying to keep on top of the ball; if the male is quietly removed he is soon missed, and the female, after a vain search for him, deserts the ball.

* 904. *Science Gossip.* "Missing links" among the Lepidoptera. p. 63–64. [Apr., 1876.]

Kunckel found that all the species of Ophideres have rigid terebrant probosces; the structure and use of these is here described (from the *Comptes rendus*); *O. fullonica* and probably the other species destroy oranges by piercing them for their juices.

* 905. Jac: Stauffer. Dung beetles. p. 71–72. [Apr., 1876.]

A female *Canthon laevis*, whose ball had fallen into a hole from which she alone could not remove it, left the ball and fetched an assistant, with whose help the ball was extricated.

* 906. C: R. Dodge. Entomological gleanings in southern fields. p. 73–76. [June, 1876.]

Larvæ of *Goniloba olynthus* found feeding on leaves of *Canna indica*, at Charleston, S. C., 10 or 12 June, pupated 19 and 20 June, imaginated 26–28 June; method of concealment of larva, and of pupation; larva and pupa described. Method of emergence of *Mantis carolina* from the egg. Description of the nest of a "trap-door spider" from S. C., and of one from the West Indies; the spider in the former nest feeds at night and resists attempts to inspect it by day.

* 907. Fs: G. Sanborn. A few words on cocoons and cocoon-builders. p. 76–78. [June, 1876.]

Definition of a cocoon in a strict and in a broad sense; description of the silk-forming organs, of various silks and of various silken abodes formed by larvæ.

* 908. W. L. Carpenter. Notes on the alpine insect fauna of the Rocky Mountains. p. 80–83. [June, 1876.]

Correspondence of alpine and arctic faunas; speculations on the reason of colorational variation and variations in size; relative luxuriance of insects of the several orders in warm and cool climates.

* 909. C: R. Dodge. Comparative scarcity of insects in the mountains of Colorado. p. 89–91. [July, 1876.]

Upon an excursion through stated localities in Colorado, insects were common on the table lands but scarce in the mountains; speculations. [See Rec., no. 941.]

* 910. **Field and Forest**, v. 2 (1876–1877), contains the following, and Nos. 911 to 945.

a. *Galeruca calmariensis* eating leaves of Ulmus, p. 12. *b*. Centennial captures [*Pieris rapae*, *Papilio troilus*, *Cimex lectularius* taken in Philadelphia], p. 33. *c*. Notice of meeting of the Entom. Club A. A. A. S. to be held at Buffalo, 22 Aug. 1876, p. 36. *d*. *Hyoscyamus niger* eaten by *Doryphora 10-lineata* (by J. W. Chickering, Jr.), p. 44. *e*. Colonies of aphids on *Cirsium lanceolatum* visited by several species of insects here insufficiently named (by E. Foreman), p. 52. *f*. *Sinea multispinosa* reported to puncture and exhaust blossoms and twigs of apple-trees, in Texas and Pennsylvania, p. 67. *g*. *Euschistus punctipes* preys upon *Doryphora 10-lineata*, p. 69. *h*. Need of legislative provision for the destruction of locusts

(by C: R. Dodge), p. 69–70. *i.* Notice of Glover's Manuscript notes . . . Heteroptera [see Rec., no. 967], p. 70–71; of Riley's 8th annual report on insects of Missouri [see Rec., no. 968], p. 71–72; of the Annual report of the Entom. Soc. Ontar. for 1875 [see Rec., no. 633], p. 72; of the Proc. Dav. Acad. Nat. Sci., v. 1 [see Rec., nos. 592–605], p. 90. *j.* New remedies for the Phylloxera [Gachez says that *Phylloxera vastatrix* abandons roots of Vitis for roots of Zea; Pignede found a remedy for the Phylloxera in burying slacked lime (CaO_2H_2) around the vines and in white-washing the decorticated vine], p. 89. *k.* Maggots in strawberries [the carpal receptacle of Fragaria infested by the maggot of a Drosophila], p. 102. *l. Cychrus viduus* taken in Lancaster Co., Pa. (by S. S. Rathvon), p. 144. *m.* Houseflies may be repelled by growing *Mimulus moschatus* in windows of rooms affected (from *Science Gossip*), p. 193. *n.* Intelligence of ants [notice too short for much value of a paper by Sir John Lubbock], p. 218.

* 911. Ja: W. Milner. Invertebrates which prey upon fishes, reptiles and amphibia. p. 4–6. [July, 1876.]

A Dytiscus caught a young *Rana halecina* and in about ten minutes devoured its viscera; in one night the same beetle killed a young *Chrysemys picta* and eat its viscera; it ate fish which were put within its reach, but did not attack them of its own accord. A *Belostoma grandis* caught fish which came within its reach while it floated on the water, and sucked out their juices. A Ranatra attacked insects and *Gammarus fasciatus* but not vertebrates. A *Cambarus obesus* ate its smaller congeners and Cyprinids.

* 912. M. S. Evans (in *Nature*). Plant fertilization. p. 15–16. [July, 1876.]

Way in which an ant cross-fertilizes a plant of the sub-order Coffeae ? at Natal, South Africa.

* 913. C: R. Dodge. Collection of economic entomology in the government exhibit at the Centennial. p. 21–24. [Aug., 1876.]

Description of the plan of arrangement of the collection, containing nearly one thousand specimens and filling twenty-four cases. [See Rec., no. 895 *k*.] [A collection embracing the plan described forms the characteristic feature of the entomologieal exhibit in the Museum of Comparative Zoology, at Cambridge, Mass. *B. P. M.*]

* 914. E. W. (in *Science Gossip*). On collecting Hymenoptera, &c. p. 35. [Aug., 1876.]

Method of preparing and using a double laurel-leaf collecting-bottle.

* 915. C: R. Dodge. Jumping seeds. p. 53–57, fig. [Oct., 1876.]

Galls of *Cynips saltitans* (galls and larvæ here described and figured) occur abundantly in summer on the under side of the leaves of oaks of the

Qu. alba group, in several states of the U. S.; in autumn they fall to the ground; they leap to distances of twenty times their diameter, making a noise like the patter of rain. Larvæ of *Carpocapsa saltitans* (larva, pupa and imago here described) occur, in Peru, Mexico and California, in capsules of an Euphorbia? (here described), and by their motions (here described) cause these to leap four times their length. Other similar occurrences are mentioned, with bibliographical references.

* 916. E. C. Merrick. Grasshoppers in the North-west. p. 64–65. [Oct., 1876.]

List of counties in Minn., Ia., Mo., Ks., Nebr., invaded by *Caloptenus spretus*, in Aug., 1876; excessive estimate that 700,000,000 eggs were laid to the hectar.

* 917. C: R. Dodge. The Colorado beetle. p. 66. [Oct., 1876.]

Doubts a quoted statement that *Doryphora 10-lineata* occurs at Block I., R. I.

* 918. S. S. Rathvon. Elm leaf beetle. (Galeruca xanthomalaena.) p. 96–98. [Dec., 1876.]

Describes larva, pupa and imago of *G. xanthomelaena*, which occurred abundantly at Lancaster, Pa.; method of pupation.

* 919. O. (in *Gardeners' Chronicle*). A fly's toilette. p. 101–102. [Dec., 1876.]

Describes the process by which a fly cleans itself.

* 920. S. S. Rathvon. Doryphora decemlineata. p. 114–116. [Jan., 1877.]

Abundance of *Doryphora 10-lineata* washed up on the sea-shore and occurring upon cars and in cargoes, so that they may be carried to Europe.

* 921. Dr. Anderson. Notes on the trap-door spider. p. 120–121. [Jan., 1877.]

A wide strand of web, holding open the lid of a spider's "den", extended across a road, for some distance on each side of it, and up a tree; parties of insects [were they the young spiders? *B. P. M.*] were marching to and from the nest on the web.

* 922. *Nature*. Caterpillars. p. 123–124. [Jan., 1877.]

Larvæ of *Pieris brassicae*, which normally pupate succinctorily, were forced to pupate suspensorily: three pupæ succeeded and five failed to attach their anal hooks to the web which had held the larva.

* 923. H. W. Livett (in *Science Gossip*). The locust in England. p. 124–125, fig. 3. [Jan., 1877.]

Pachytylus migratorius found in England; figures of it.

* 924. C: R. Dodge. The grasshopper bill in Congress. p. 125–126. [Jan., 1877.]

Text of and comments upon a bill introduced into the House of Representatives by Mr. Hatcher of Missouri, 18 Dec., 1876.

* 925. W: Saunders. Phylloxera vastatrix. p. 138–140. [Feb., 1877.]

The ravages of the Phylloxera are only rendered possible by the previous weakening of the grape-vines by mildew (Oidium); the Zea remedy [see Rec., no. 910 *j*] is discredited.

* 926. C: R. Dodge. Acridium americanum. p. 145, fig. 4. [Feb., 1877.]

A swarm of these locusts visited Vevay, Ind., in November; figure of the locust.

* 927. C: R. Dodge. Appearance of snow fleas. p. 145–146. [Feb., 1877.]

Myriads of *Podura nivicola?* appeared in winter, upon snow.

* 928. S. S. Rathvon. Insect longevity. p. 156–158. [Mar., 1877.]

A specimen of *Hylotrupes bullatus* worked in the pine wood of a piece of furniture at least fifteen years.

* 929. C: R. Dodge. The "lubber" grasshopper. p. 160–161. [Mar., 1877.]

Description of eggs, young and imagos of *Rhomalea microptera*; notes on the habits of the species.

* 930. Mr. Meek (in *Science Gossip*). The venomous spider of New Zealand. p. 161–162. [Mar., 1877.]

Effects of the bite of the "kapito." [See Rec., no. 560 *g*.]

* 931. G. J. Romaines (in *Nature*). Sense of hearing in birds and insects. p. 162–163. [Mar., 1877.]

"An auditory sense is certainly present" in moths.

* 932. J. R. S. C. Friendly spiders. p. 164. [Mar., 1877.]

A spider helped a neighbor catch a fly.

* 933. S. S. Rathvon. Trox scaber. p. 164. [Mar., 1877.]

Fifteen hundred specimens of *Trox scaber* taken at one time within an area of thirty-one square decimetres, at Lancaster, Pa., Oct., 1876.

* 934. W: H. Seaman. On plant galls. p. 165–171. [Apr., 1877.]

[Abstract of an article by M. W. Beyerinck, in the *Botanische Zeitung* for Jan., 1877.] A valuable taxonomic synopsis of galls, with bibliography.

* 935. C: R. Dodge. Hungry Anthreni. p. 184. [Apr., 1877.]

Paper labels partly eaten in a box in which butterflies had been eaten by Anthrenus; was it from hunger or from choice ?

* 936. Ja: S. Johnson. A new killing bottle. p. 194–195, fig. 5. [May, 1877.]

Description and figure of an oval bottle, less liable to breakage than a cylindrical bottle.

* 937. *Nature*. The Phylloxera and insecticides. p. 199–201. [May, 1877.]

[Abstract of an official report to the French Academy of Sciences.] Requisites to an efficient remedy for the Phylloxera; seven groups of substances experimentally used; only sulphur compounds give satisfactory results, and of these the sulpho-carbonates give the best results; proper method of application of the remedy.

* 938. Ja: S. Johnson. Hints on hunting Catocala. p. 201–202. [May, 1877.]

Several species of Catocala hide very closely under loose bark and can only be dislodged by hard beating of the tree-trunk.

* 939. Ja: H. Bell (in *Canadian Entomologist*). Good words. p. 202. [May, 1877.]

A portion of the periodical should be devoted to notices facilitating the discovery, capture and preservation of the rarer species of insects.

* 940. C. E. Worthington (in *Canadian Entomologist*). Two pupæ in one cocoon. p. 203. [May, 1877.]

Two pupæ of *Attacus cecropia* in a cocoon of one chamber.

* 941. C: R. Dodge. Insects in Colorado. p. 205–206. [June, 1877.]

Re-iterates the assertions cited in Rec., no. 909.

* 942. J. R. S. (in *Science Gossip*). Strength of the stag-beetle. p. 206. [June, 1877.]

Lucanus cervus lifted nearly one and a half kilograms.

* 943. G: Welles (in *Nebraska Farmer*). Concussion theory. p. 216. [June, 1877.]

Locust-eggs are crushed when water-wheels fall on them.

* 944. C: R. Dodge. Singular "insect injury." p. 217, fig. 5. [June, 1877.]

A minie ball gnawed through by the larva of an Orthosoma? [Hagen says, l. c., v. 3, p. 55, probably gnawed by the imago.]

* 945. Fritz Mueller (in *Nature*). Commensalism among caterpillars [corr.]. p. 217–218. [June, 1877.]

A small caterpillar lives amongst the branching thorns on the back of another caterpillar, and feeds upon the same leaves with it.

* 946. **Field and Forest**, v. 3 (1877-78), as far as p. 134, contains the following, and nos. 947 to 966.

a. Phytoptus galls. [Certain protuberances formerly supposed to be fungi on leaves of Fagus and on other leaves may be galls of a Phytoptus; a translation of an article by G. Briosi on the Phytoptus of Vitis is published in the *Monthly Microscopic Journal* for May, 1877], p. 16. *b.* Ravages of white ants [books eaten by Termes in Liberia], p. 17. *c.* The big bed-bug [effects of the bite of *Conorhinus sanguisuga*] (by Dr. J. S. Walker), p. 18. *d.* Enemy to the potato beetle [eggs of *Doryphora 10-lineata* eaten by *Lema 3-lineata*], p. 18. *e.* Natural and artificial checks have reduced greatly the prospect of injuries by locusts in Nebraska, p. 19. *f.* Notice of the Annu. Rep. Entom. Soc. Ontar. for 1876 [see Rec., no. 972], p. 20; of the same for 1877 [see Rec., no. 973], p. 134; of Glover's Entomological Index to Agricultural Reports [see Rec. no. 968], p. 94; of Thomas' 6th Report on insects of Illinois [see Rec., no. 974], p. 134; of King's Bee-keeper's text book [see Rec., no. 975], p. 134; of Provancher's Additions et corrections à la Faune coléoptèrologique de Québec [see Rec., no. 976], p. 134. *g.* The Destructive Insects Bill in Great Britain [sketch of an act of Parliament for the destruction of *Doryphora 10-lineata*], p. 52. *h.* Calendar of meetings of the Cambridge Entomological Club, for 1877–1878, p. 55. *i.* The business of breeding maggots in Paris by exposing carrion to the flies was suppressed by the police (from *Nature*), p. 55. *j.* Two living specimens of *Doryphora 10-lineata* found at Liverpool (from *Nature*), p. 55–56. *k.* Forficula raises its elytra with its forceps in preparing for flight (by J: G. Morris) (from *Canadian Entomologist*), p. 85. *l.* A migratory flight of *Danais archippus* and other butterflies occurred in Denton Co., Texas, from 15 Oct. to 5 Nov., p. 91. *m.* Moths injuring pianos by destroying the woolen dampers, p. 91–92. *n.* Description and figures of recent inventions for insect destruction [for destroying Aletia, Leucania and Doryphora] (by Dan: Breed), p. 92, p. 93, fig. 23–27. *o.* Squib concerning *Amblychila cylindriformis* (from *New England Farmer*), p. 94. *p.* A vessel 160 kilometres east of the capes of Virginia boarded by hundreds of specimens of *Doryphora 10-lineata*, p. 94. *q.* The "tarantula"

Field and Forest, v. 3.

[habits of a Mygale; its battle with a toad], p. 129-130. *r.* Death trap to bees [bees die wedged in the corolla-tube of Tritoma, in England,] p. 132. *s.* Decortication as a remedy for the Phylloxera, p. 132. *t.* Winter butterflies [*Melitaea phaeton* flying 25 Dec. in Texas; fruit of *Quercus obtusiloba* destroyed by Balaninus], p. 132. *u.* Method of arrangement of the collection illustrating economic entomology sent by the U. S. Department of Agriculture to the Paris Exhibition, p. 133. *v.* Notice of the forthcoming report of the U. S. Entomological Commission, p. 133.

* 947. C: R. Dodge. Collecting nets for insects. p. 4–8, fig. 1–6. (July, 1877.]

Descriptions and figures of various nets.

* 948. Ja: S. Johnson. Response to "Good words." p. 31–32. [Sept., 1877.]

Description of a collecting net which can be carried in a pocket; of a gig for moths; of the way to kill large-bodied moths.

* 949. *Nature.* The subject of insect warefare in Great Britain. p. 32–35. [Sept., 1877.]

Minutes of a conference of British agriculturists; paper by Mr. Andr: Murray; besides occasional great injuries insects cause a continual drain of agricultural products; coöperative measures against insects, especially in the rotation of crops, are necessary; the general government must secure the needed coöperation.

* 950. M. E. Banning. Notes on the fungi of Maryland. p. 42–47. [Oct., 1877.]

Growth of fungi upon insects.

* 951. W. L. Carpenter. Lepidoptera of Big Horn Mountains. p. 48. [Oct., 1877.]

List of 37 spp. of butterflies collected in Big Horn Mts., Dakota; description (by W: H. Edwards) of *Thecla sheridonii* n. sp.

* 952. N. Coleman. Insect longevity. p. 53–54. [Oct., 1877.]

The larva of a capricorn beetle living in a lath fourteen years.

* 953. Rev. A. Lakes. Predatory flies. p. 54–55. [Oct., 1877.]

A Pompilid wasp carrying and burying a caterpillar.

* 954. H. A. Hagen. Lead boring insects. p. 55. [Oct., 1877.]

Notice of article cited in Rec., no. 944. Citation of previous writings upon the subject.

Nos. 45–46 were issued June 14, 1878.